

THE THEORY OF VALENCY

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The theory of valency by J. Newton Friend

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J. NEWTON FRIEND

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OF VALENCY**

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P R E F A C E

It seems rather remarkable that no treatise should be extant in our own language on such an important subject as valency. Nor is the German literature in a much better position, for it contains but one monograph on the subject, written by Dr. F. Willy Hinrichsen in 1902. This, though excellent, can scarcely be regarded as exhaustive. Moreover, during the past six years much new material has been collected, and calls for rearrangement and discussion.

Perhaps this lack of systematic treatment of the subject is to be ascribed to the difficulty of reconciling any theory of valency with the facts of inorganic chemistry. But the remarkable success which has attended our application of the theory to the study of organic chemistry may be regarded as a guarantee that we are on the right track, and should serve to stimulate us, rather than otherwise, in our attempts to perfect our theory. It has been my endeavour in the present volume to present to the reader a concise account of the more important theories of chemical combination, which have exercised the minds of scientific men down to the present day.

The determination of the numerical value of the valencies of the elements is not always easy. The Periodic Classification, however, frequently gives us help in this direction, and has therefore received full treatment in the text. Some of my readers may be surprised that Dulong and Petit's Law of Specific Heats has not been discussed. The answer is, that, if the atomic weights of the elements are deduced by the help